Solar Reflectance Index Calculation Worksheet Instructions

Usage:
The purpose of this calculator is to enable contractors and homeowners to quickly and accurately calculate the solar reflectance index (SRI) of their roof for showing compliance with the California Building Energy Efficiency Standards. The 2008 Building Energy Efficiency Standards allows compliance with the prescriptive cool roof requirements, either by meeting prescriptive requirements for the aged reflectance and initial thermal emittance requirements, or alternatively, by meeting the required SRI value, which is dependent on the roof slope and the total weight of the roofing material. The SRI alternative is useful when a particular product exceeds the Building Energy Efficiency Standards requirement for either the aged solar reflectance or the initial thermal emittance, but does not meet both requirements. In this case the combination of the aged solar reflectance and the initial thermal emittance for the product may be sufficient to comply with the SRI requirement.

Requirements:

- Adobe Acrobat Reader 5.0 or later or Adobe Acrobat Professional 5.0 or later

Instructions:

1. Input all pertinent data about the project in the appropriate boxes (date, climate zone, building type, the project name, and the address of the project). Note: for the date box, you may either type the date or use the drop-down calendar. For the climate zone, select the correct climate zone for the project from the 16 on the drop-down list (determine the correct climate zone at http://www.energy.ca.gov/maps/building_climate_zones.html). For the building type, click one of the radio buttons, either Residential or Nonresidential. All required fields are shaded in blue.
2. Complete the row of boxes beneath the sample label (beginning with "CRRC Product ID Number") based on product information on the Cool Roof Rating Council's (CRRC's) website. The product directory is located at http://www.coolroofs.org/products/search.php, and may be browsed either by viewing all products or by using the search function to find a specific product.
3. Use the radio buttons to select the roof pitch as either "≤2:12" (less than or equal to 2:12) or ">2:12" (greater than 2:12). A roof pitch of 2:12 is approximately 9.5 degree slope.
4. Use the second set of radio buttons to select the roofing product as either "<5 lb/sq ft" (less than 5 pounds per square foot) or "≥5 lb/sq ft" (greater than or equal to 5 pounds per square foot).
5. Enter the information for the series of boxes under "SRI Calculations." First, specify whether or not your product's 3-year aged solar reflectance is listed on the CRRC website by selecting either "yes" or "no" from the drop-down list. Depending on your selection, the boxes that you will not need will become blacked out.
6. If you selected "yes," enter the CRRC listed 3-year aged solar reflectance. If you selected "no," enter the CRRC listed initial solar reflectance. Once you hit "Enter" or click outside the box, the calculator will automatically calculate the default aged solar reflectance that will be used for the SRI calculation, based on the initial solar reflectance that you entered. Be sure to enter the solar reflectance value as a two-digit decimal between 0 and 1.
7. Finally, enter the CRRC listed initial thermal emittance. Be sure to enter the initial thermal emittance as a two-digit decimal between 0 and 1.
8. After you have entered values for both solar reflectance and initial thermal emittance, hit "Enter" or click outside the box, the calculator will calculate the SRI value for the project. The calculator may take a few moments to determine the SRI value.